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PHOTOGRAPHIC
INTERPRETATION
REPORT

NATIONAL PHOTOGRAPHIC
INTERPRETATION CENTER

WUCHAI SSM LAUNCH COMPLEX CHINA

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ABSTRACT

An SSM launch complex has been newly identified near Wuchai, China. The SSM complex consists of a launch site (similar to those at Shuangcheng-tzu Missile Test Center), a support base, and seven support areas. Probably associated with the complex is Wuchai Airfield North and a 40-nautical-mile (nm) rail spur from Ningwu to the launch complex, both under construction.

This report presents descriptions of the components of the launch complex together with four photographs, two line drawings, and a perspective sketch. An annotated mosaic shows the layout of the complex and its relation to the airfield, the railroad, and the rail transfer point.

A table provides construction chronology, coordinates, and other pertinent data. Information in this report is current as of March 1970.

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INTRODUCTION

The Wuchai SSM Launch Complex (Figure 1), the only known ballistic missile launch complex in China outside the Shuangchengtzu Missile Test Center (SCTMTC), is located in a relatively isolated narrow valley 230 nm southwest of Peking, 70 nm northwest of Taiyuan, and 550 nm east-southeast of SCTMTC.

This launch complex is similar in size and configuration to launch complexes at SCTMTC where MRBMs similar to the Soviet SS-3 have been test fired since 1961.

The launch complex is served by a 41-mile-long improved road which leads from a rail transfer point located 6 nm north of Ningwu (39-00N 112-18E) on the railroad between Taiyuan and Tatung. A 40-mile-long railroad has been under construction from Ningwu since August 1968. The roadbed has been constructed to the complex area, but as of March 1970 only 9 miles of rail had been laid.

The construction of the support base and the launch site was initiated in the spring and summer of 1967, although the construction of the rail transfer point and improvement of the road leading to the complex were evident in 1966.

In the summer of 1968 the launch site was operational and the support base was completed. During the same time period, construction started on seven support areas, the railroad, and the airfield. This construction activity continued during 1969 and as of 19 March 1970 was still in progress.

See Table 2 for construction chronology.

BASIC DESCRIPTION

The major facilities at the Wuchai SSM Launch Complex are one SSM launch site, one support base, and seven smaller support areas. Wuchai Airfield North, under construction 16 nm northeast of the launch site, is probably associated with the launch complex.

WUCHAI SSM LAUNCH SITE

The launch site (Figures 2, 3, and 4) consists of a concrete-surfaced 40-meter-square (131-foot) launch pad, a control bunker, seven vehicle revetments, two ground support equipment parking areas, and a small support area containing three barracks/support buildings.

The arrangement and layout of this launch site are very similar to those at complexes A and D at the Shuangchengtzu Missile Test Center.

The three pads at SCTMTC and the Wuchai pad are all served by loop access roads that intersect the launch pads at the northeast and southwest corners. The loading access through the launch pad at Wuchai

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complexes A and D, indicating that they are all oriented in the same direction for firing toward the west. The size and arrangement of the vehicle revetments are similar at all four sites.

Complex D has a 30-meter- (98.6-foot-) square launch pad with the control bunker to the rear. The Wuchai launch pad is 40 meters (131 feet) square, with the control bunker to the rear. The pads at complex A, the original launch complex constructed with Soviet assistance in 1961, are larger and more sophisticated. Complex D and the Wuchai launch site, constructed in 1966 and 1967, respectively, are apparently "field" versions of the original launch pads at complex A.

Launch Site Construction Chronology

The area was not present in May 1967. Construction activity was first observed in August 1967, when the site access road, the control bunker, and the ground support equipment area north appeared completed, and ground scarring and track activity were evident in the launch pad and support areas.

In September 1967 the pad configuration and control cable ditches were apparent, the seven vehicle revetments were present, and two buildings were under construction in the support area.

In November 1967 the launch pad had been surfaced and the loop roads and other roads within the site were under construction.

The next adequate photo coverage of this site was nine months later, on , when the launch site had been completed. A dark area, possibly a burn scar, was evident in the center of the launch pad, suggesting the possibility of a missile firing from this pad It cannot be determined if this dark area on the launch pad was present on hazy, indistinct, monoscopic photography

There were no significant changes in the facilities of this launch site from August 1968 to 19 March 1970.

Missile Exercises and Ground Support Equipment

a missile, on a transporter-erector, was seen on the launch pad. Four probable oxidizer trailers were parked in the ground support equipment area north. Five or six other vehicles or pieces of equipment were in the vicinity of the pad.

on photography of fair to poor interpretability, a probable missile on a transporter-erector was seen on the launch pad. Four vehicles, probably oxidizer trailers, were parked in the ground support equipment area north. Six vehicles, possibly fuel trucks, were parked in the ground support equipment area south. Three vehicles or pieces of equipment were seen on the pad.

six vehicles, possibly fuel trucks, were observed at the ground support equipment area south. The ground support equipment area north, where the four oxidizer trailers had been parked was empty.

six possible fuel trucks were again present in the same location, and the ground equipment area north was empty.

Four oxidizer trailers and five or more fuel trucks are usually present during missile launch exercises at complex A at the Shuangchengtzu Missile Test Center.

Large Excavation

A large rectangular excavation is located 0.5 nm north of the launch site. Not present in March 1969, it was first observed under construction in October 1969. By March 1970, the date of the only subsequent coverage, the excavation had attained dimensions of 192 by 126 meters (630 by 415 feet) with a depth of

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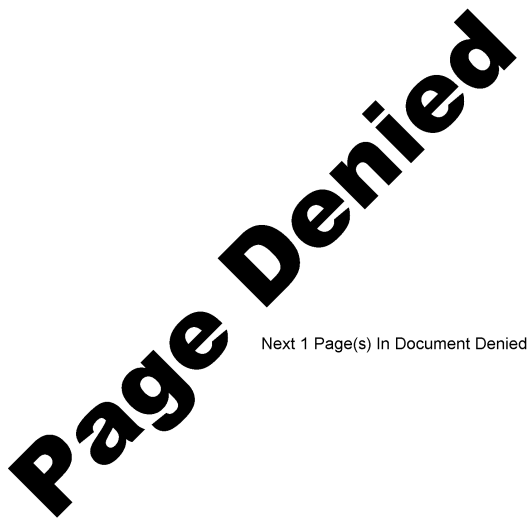

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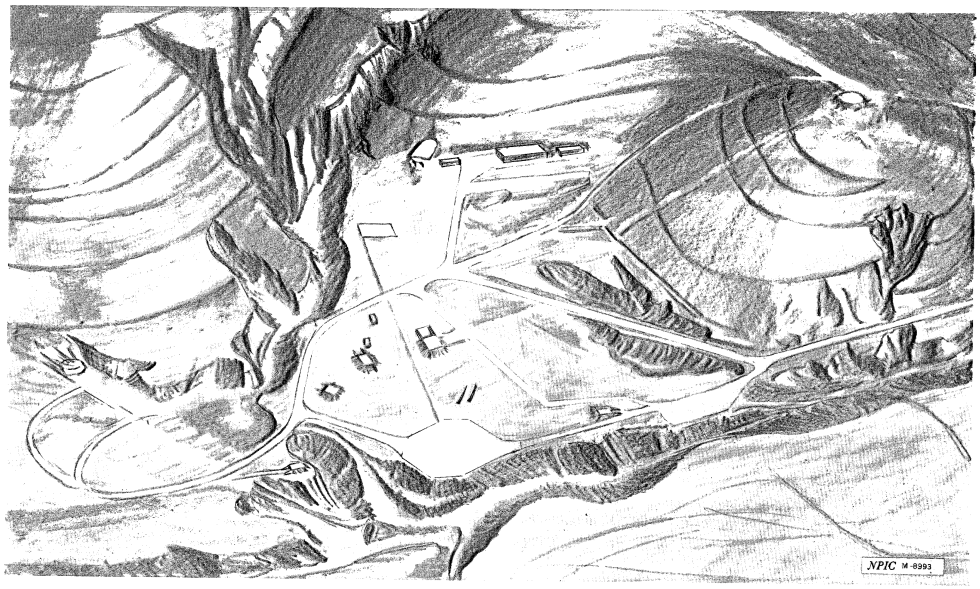

FIGURE 4. PERSPECTIVE OF SSM LAUNCH SITE

Table 1. Data Pertaining to SSM Launch Site (Items keyed to Figure 3)

Item	Description	Construction First Observed	Construction Complete
1	Semiburied water tanks (2)	Aug 67	Nov 67
2	Ground support equipment area north	Aug 67	Aug 67
3	Vehicle revetment	Sep 67	Sep 67
4	Vehicle revetment	Sep 67	Sep 67
5	Launch pad	Aug 67	Nov 67
6	Vehicle revetment	Sep 67	Sep 67
7	Bldg	Sep 67	Sep 67
8	Main control cable length	Sep 67	Aug 68
9	Control bunker	Aug 67	Aug 67
10	Vehicle revetment	Sep 67	Sep 67
11	Vehicle revetments (2)	Sep 67	Sep 67
12	Vehicle revetment	Sep 67	Sep 67
13	Ground support equipment area south	Nov 67	Aug 68
14	Unid structure	Aug 67	Aug 67
15	Support bldg	Aug 68	Aug 68
16	Prob barracks	Sep 67	Nov 67
17	Support bldg	Sep 67	Nov 67
18	Site access road width	Aug 67	Aug 67

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Table 2. Wuchai SSM Launch Complex--Construction Chronology and Activity

Launch Site (38-50-16N 111-36-06E)	Support Base (38-48-51N 111-36-40E)	Support Area 1 (38-48-09N 111-37-40E)	Support Area 2 (38-48-49N 111-38-44E)	Support Area 3 (38-49-27N 111-40-17E)	Support Area 4 (38-48-28N 111-41-00E)	Support Area 5 (38-47-31N 111-40-16E)	Support Area 6 (38-48-15N 111-42-24E)	Support Area 7 (38-48-45N 111-42-45E)	Wuchai Airfield North (39-04N 111-45E)	Railroad Construction
--	Not present	Earth scarring and prob bldg foundations present	--	11 barracks present	--	--	--	--	--	--
Not present	7 bldgs	7 bldgs	--	Motor pool added	--	--	--	--	--	--
Initial grading and scarring in pad area. Site access road, ground support equipment area north, control bunker, and unid structure appeared complete; water tank ucon.	12 bldgs	NAC	Not present	NAC	--	--	--	--	--	--
Pad configuration apparent; 7 vehicle revetments and 1 small bldg complete; 2 large bldgs ucon in support area; open ditch for control cable between pad and control bunker.	33 bldgs	NAC	Poss ground scarring	NAC	--	--	--	Not present	--	--
Launch pad completely surfaced with concrete; road net within site ucon; 2 large bldgs in support area complete; open ditch for water lines.	47 bldgs	10 bldgs and 4 ucon	2 bldgs ucon	NAC	Not present	Not present	Not present	3 bldgs ucon	--	Not present
Hazy, indistinct image. Poss negation of dark area at center of launch pad.	IDO	IDO	IDO	CC	CC	CC	CC	CC	--	CC
Road net within site is complete, ditch backfilled, and all components of site present and apparently complete; dark area observed at center of pad.	Support base essentially completed; 100 bldgs	21 bldgs	3 bldgs and 6 ucon	Driver-training area added	Early stages of construction	17 bldgs	Earth scarring and construction activity	14 bldgs ucon	Not present	Bridge piers ucon at Ningwu; .5-nm roadbed construction near Wuchai.
Missile on transporter-erector observed on pad; 5 or 6 vehicles/pieces of equipment in pad area; 4 prob oxidizer trailers in ground support area north.	105 bldgs	36 bldgs and a motor pool	13 bldgs and 13 ucon	NAC	30 bldgs and 9 ucon	26 bldgs	3 barracks and 7 storage bldgs. Large open storage area for construction material.	23 completed barracks or storage bldgs	Initial construction-earth grading of runway and taxiways in progress.	2-nm roadbed construction near Shenchih; 3-nm roadbed construction at Ningwu.
6 poss fuel trucks in southern ground support equipment area; control cable partially unearthed between pad and control bunker.	NAC	NAC	15 bldgs and 11 ucon	NAC	NAC	NAC	NAC	NAC	2 large bldgs ucon; snow covered, but definite outlines of runway and taxiways are visible.	NAC
Additional section of control cable unearthed; open cable ditch extends north from main control cable to vehicle revetment.	NAC	NAC	19 bldgs and 10 ucon	NAC	NAC	NAC	NAC	NAC	2 large bldgs complete. Earth grading of runway and taxiways in progress.	NAC
Main control cable completely unearthed between launch pad and control bunker. Cable ditch between main control cable and vehicle revetment has been backfilled.	NAC	IDO	IDO	IDO	IDO	IDO	IDO	IDO	Earth grading of runway and taxiways in progress.	Bridge piers still ucon at Ningwu.
NC	NC	NC	NC	NC	NC	NC	NC	NC	Approx 60 completed bldgs. Final surface on 5% of runway.	NC
Prob missile on transporter-erector observed on pad; 4 prob oxidizer trailers in ground support equipment area north; 6 poss fuel trucks in ground support equipment area south; 3 vehicles/pieces of equipment on pad.	NAC	39 bldgs	NC	NC	NC	NC	NC	NC	NC	NC
NC	NC	NC	NC	NC	NC	NC	NC	NC	Final surface on 30% of runway.	Ningwu bridge complete; 1 nm of rail laid west of Ningwu; ten bridges ucon between Ningwu and Shenshih; roadbed construction continuous to Wuchai.
6 poss fuel trucks in ground support equipment area south.	107 bldgs	IDO	IDO	IDO	IDO	IDO	3 barracks and 14 storage bldgs. Construction material present; open storage area expanded in size.	NAC	Final surface on 40% of runway. Remainder of runway has been prepared for surface.	9 nm of rail laid between Ningwu and Shenchih; roadbed construction extended to 10 nm SW of Wuchai.

Key to abbreviations: NC = not covered NAC = no apparent change IDO = identification only CC = cloud covered

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17 meters (56 feet) on its western end, sloping to a depth of 30 meters (98 feet) on its eastern end. Graded roadways extending from the northeastern and southwestern corners of the excavation provide the only access.

Area of Unidentified Activity

An area of unidentified activity (Figure 5) is located 2.5 nm north of the launch site. Not present in November 1967, the site was very active when first seen in August 1968. Excavating, grading, and tunneling activity were in progress in three or four places along the side of a ridge. A construction camp of approximately 25 buildings and considerable vehicular track activity were evident. A new road and a water pipeline had been constructed from the support base to this area, and a previously existing road had been improved. On the sides of hills, in the vicinity of this activity, five separate likenesses of Mao-tse-tung, [redacted] and several Chinese characters have been inscribed. A dark circular area, [redacted], was observed in October 1969 and in March 1970 on a bench which had been cut into the side of a steep slope. This dark circle does not appear to have height or depth and its function is undetermined.

SUPPORT BASE

The support base (Figures 6, 7, and 8), 1.5 nm south-southeast of the launch site, consists of approximately 107 buildings, of which the 20 largest [redacted]

An administration and housing area is located in the eastern portion of the base along the road leading to the launch site. In the western portion of the base several storage buildings are dispersed along a deep ravine.

An improved road leads to an area of unidentified activity, possibly electronics related, located on a ridge 1 nm southwest of the administration and housing area.

The support base was not present in November 1966. When first observed in May 1967, the administration building and six storage buildings were present. By November 1967, 40 additional buildings had been constructed. On photography of August 1968 the support base appeared essentially complete. Only seven buildings were added between August 1968 and March 1970.

SUPPORT AREAS

Seven support areas are located, approximately 1 nm apart, in the 4.5- by 2-nm valley south and east of the support base. These support areas (numbered 1 through 7) were constructed in the same time period as the SSM launch site and are considered part of the SSM complex (see Figure 6).

Support Area 1

Located 0.5 nm south of the support base, this support area consisted of 39 buildings, including 21 barracks type, and a small motor pool when last seen in October 1969. The four largest buildings in this area are [redacted] and one is revetted on three sides. Although earth scarring was visible on photography from February to November 1966, seven buildings were first seen in May 1967. There were ten buildings in November 1967 and 36 buildings in November 1968.

Support Area 2

This area consisted of 19 buildings and ten additional under construction when last seen in February 1969. This may be a POL area. Some of the structures resemble typical earth-covered rectangular fuel dumps and approximately 20 rows of possible fuel drums are located at the southeastern corner of the area. Not present in August 1967, ground scarring was apparent in September 1967 and two buildings were under construction in November 1967.

Support Area 3

This area consisted of 11 barracks-type buildings, a small motor pool, and a driver-training area when last seen in February 1969. The buildings were

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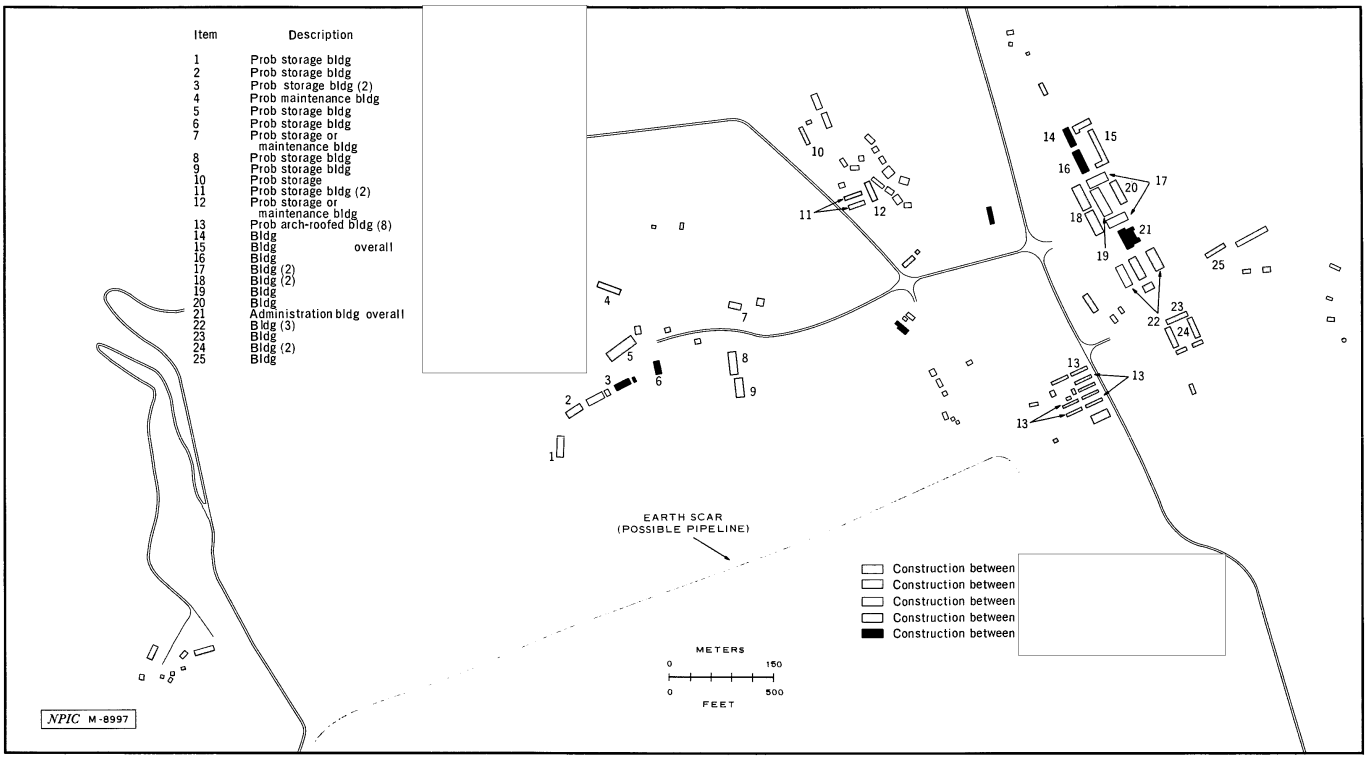

FIGURE 8. LINE DRAWING OF SSM SUPPORT BASE

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present when the area was first seen in February 1966. The motor pool was first seen in May 1967. The driver-training area, located just east of the barracks buildings, was first seen in August 1968. Approximately 1 nm southwest of this support area is an extensive area of personnel trenches and possible weapons positions. First observed in May 1967, this trenching activity has gradually increased and in February 1969 occupied an area

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Support Area 4

Support area 4, when last seen in February 1969, consisted of 14 buildings, including nine still under construction. Some of these buildings appear to be of heavy construction. Also present at this time were ten smaller storage buildings, two garages, and two adjoining motor pools. Over a ridge and 500 meters (1,500 feet) east of the motor pools is a barracks area of 15 buildings, including nine barracks type and six support buildings. Not present in November 1967, this area was in an early stage of construction in August 1968. There was no apparent change in this area between November 1968 and February 1969.

Support Area 5

Support area 5 is a barracks area which consisted of 22 barracks, an administration building, and three support buildings when last seen in February 1969. Thirteen small revetments were located approximately 667 meters (2,000 feet) north of the barracks buildings. No activity was observed in this area in November 1967. Seventeen completed buildings were observed in August 1968. There was no apparent change in this area between November 1968 and February 1969.

Support Area 6

In March 1970 this area consisted of three barracks, 13 storage buildings or barracks, and a large open storage area containing numerous rows of construction material. There was no activity in this area in November 1967. Earth scarring and construction activity were first observed in August 1968. Ten buildings and the construction materials storage area were observed in November 1968.

Support Area 7

In March 1970 this area consisted of 23 storage buildings or barracks. No activity was observed in this area in September 1967. Three buildings were under construction in November 1967. In August 1968, 14 buildings in various stages of construction were observed. There was no apparent change in this area between November 1968 and March 1970.

WUCHAI AIRFIELD NORTH

Wuchai Airfield North, located 10 nm north-northwest of Wuchai, has been under construction since the fall of 1968. On there were no indications of airfield construction. By , the date of the next photography of this area, considerable earth grading had been accomplished and the outlines of the following components of the airfield were visible: a north-northwest/south-southeast runway, a parallel taxiway, three large parking aprons, a ladder-type parking apron, two crossover links, and four high-speed turnoffs.

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Photography of December 1968 and February and March 1969 was snow covered and showed little change in construction status except for additional aggregate piles and the construction of two large buildings

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In August 1969, the date of the next photography, 60 buildings (at least 35 of which are barracks type) had been constructed, 5 percent of the runway had a final surface, and 25 percent of the runway had the initial surface prepared.

In October 1969, 30 percent of the runway had a final surface. In March 1970, 40 percent of the runway had a final surface, and the remaining portion was being graded and scraped for surfacing.

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When completed, the airfield probably will be utilized as a base for transport aircraft. This is evidenced by the large parking aprons and the absence of alert aprons and aircraft revetments. The runway has not been operational to date and no aircraft have been observed at the airfield.

RAIL TRANSFER POINT

A rail transfer point is located adjacent to the Taiyuan-Tatung rail line approximately 6 nm north of Ningwu. Missiles observed at the launch complex were probably unloaded from the rail car at this transfer point. It consists of a POL storage area on the east side of the rail line and construction support and storage area on the west side. Each area is served by a spur from the main railroad.

The POL area, not present in February 1966, was first observed under construction in April 1966 and was complete when observed on the next photographic coverage in August 1967. It consists of two large probable storage buildings, at least five smaller buildings, and a POL off-loading point connected by underground pipeline to six large, earth-mounded tanks. A road, with a turn-around loop at its terminus, parallels the rail spur serving the facility.

The construction support and storage area, not present in June 1966, was first observed under construction in August 1967. The facility appeared complete by July 1968, the date of the next photographic coverage. It contains three large warehouses parallel to the rail spur, approximately 30 smaller buildings, and an extensive area of open storage.

RAILROAD CONSTRUCTION

Since August 1968 a rail line, approximately 40 nm long, has been under construction from Ningwu (39-00N 112-18E), on the main railroad between Taiyuan and Tatung, leading westward to the Wuchai SSM Launch Complex. As of March 1970 the roadbed had been constructed to a point 4 nm southeast of the Wuchai Launch Site and work was still in progress. The rail line is probably operational between Ningwu and Shenchih, a distance of approximately 9 nm.

In August 1968 initial work was in progress on the rail bridge piers at Ningwu and approximately 0.5 nm of roadbed construction was evident just north of Wuchai.

In September 1968 approximately 3 nm of roadbed construction were evident just west of Ningwu, 2 nm of roadbed construction were seen at Shenchih, and bridge pier construction was continuing at Ningwu.

In March 1969 rail bridge pier construction was in progress at Ningwu, but there was no change in roadbed construction.

On October 1969 photography of the Ningwu railroad bridge was completed, approximately 1 nm of rail had been laid extending from the rail junction at Ningwu, ten bridges between Ningwu and Shenchih were still under construction, and the roadbed extended continuously for approximately 30 nm to Wuchai.

By March 1970 the roadbed had been extended an additional 10 nm southwest of Wuchai to the Wuchai SSM launch support area 2, which is 4 nm southeast of the launch site. The rail line appeared operational for the 9 miles between Ningwu and Shenchih.

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REFERENCES

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MAPS OR CHARTS

ACIC. Tactical Pilotage Chart, Series TPC, Sheet G-9B, edition 1, Oct 68, scale 1:500,000 (UNCLASSIFIED)

REQUIREMENT

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